REMARKS

Claims 1-8, 10-14, 16-22, 26-34, 36-66 are now pending in the application. Claims 1-23 and 25-66 stand rejected. Claim 24 is objected to. Claims 9, 15, 23, 24 and 35 have been cancelled, and Claims 1, 6-7, 20-22, 25-32, 34, 36-37, 47-51, 53-54, 56-57, 63, 65-66 have been amended herein. Support for the amendments can be found throughout the application, drawings and claims as originally filed and, as such, no new matter has been presented. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained therein.

CLAIM AMENDMENTS

The claims are presently amended to further clarify the presently pending claims for consideration and to correct minor informalities. Applicants submit that support for these amendments can be found in Applicants' specification and drawings as filed, and thus, these amendments do not raise issues of new matter. In addition, in the interests of expediting prosecution, Applicants have cancelled Claims 9, 15, 23, 35 and amended independent Claims 7, 20 and 34 to include the features recited in these claims.

ELECTION RESTRICTION

The undersigned acknowledges the Examiner's withdrawal of the requirement for restriction in view of Applicants' traversal and the status of Applicants' current scope. Applicants also note the Examiner's reservation of right to impose restrictions at a further time should Applicants amend the claims to diverge significantly from their

present scope.

SPECIFICATION

The specification has been amended to overcome minor informalities. Applicants respectfully assert that no new matter has been added via these minor amendments.

REJECTION UNDER 35 U.S.C. § 112

Claims 7-19 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Applicants have amended the specification to provide support for the recitation of "a bus utilization percentage in a range from 13% to 25% is achieved for 8 Kbyte data transfers across the bus." As this subject matter was present in the claims as filed, Applicants submit no new matter was added via this amendment. Therefore, reconsideration and withdrawal of these rejections are respectfully requested.

Claims 6, 7-19, 30-32, and 34-53 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicants regard as the invention. Applicants have amended these claims to overcome this rejection. Therefore, reconsideration and withdrawal of these rejections are respectfully requested.

ALLOWABLE SUBJECT MATTER

The Examiner states that Claim 24 would be allowable if rewritten in independent form. Applicants thank the Examiner for this indication of allowable subject matter. In

order to expedite prosecution, Applicants have amended independent Claims 20 and 54 to include the allowable subject matter of Claim 24. Therefore, Claims 20 and 54 should now be in condition for allowance, along with Claims 21-23, 25-33 and 55-62 that depend from either independent Claim 20 or 54.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-6, 20-23, 26-29, 33-37, 47, 50-52 and 65 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Odom (U.S. Pat. App. No. 2004/0093438; hereinafter "Odom"). This rejection is respectfully traversed.

Initially, Applicants note that Odom appears to disclose a direct memory access (DMA) device that transfers data from an I/O resource to a data sink. The DMA device accesses a context memory to get context parameters regarding each DMA channel to configure a particular DMA channel for data transfer. Thus, the context memory provides pre-stored configurations for the DMA channels to enable data transfer. Further, Odom only appears to involve the use of DMA for data transfer over the bus. In contrast, independent Claim 1 has been amended to recite:

> each board comprising a communication utility for communicating data over the bus to another board through a plurality of channels, and wherein at least one of the channels has a user-redefinable configuration, the user-redefinable configuration including whether **direct memory access (DMA) is used or not used to transfer data over the bus** (emphasis added).

Independent Claim 34 has been amended to recite:

> defining a configuration for a channel through which data is communicated over a bus by a communication utility interfacing the first processor with the second processor, the channel configuration redefinable by a user based on at

least one user input, the user input including at least one of a configuration for the transfer of data over the bus selected from **a DMA transfer or a non-DMA transfer**...(emphasis added).

Independent Claim 65 has been amended to recite:

> a plurality of instructions that are executable by a computer for managing data communication over a bus between a first data processing board and a second data processing board, the one or more instructions defining how the boards communicate data therebetween over the bus through a plurality of communication channels, including **whether or not DMA is used to transfer the data over the bus**, and at least one of the communication channels possesses a redefinable configuration (emphasis added).

In view of the above discussion, Applicants respectfully assert that Odom does not teach, suggest or disclose each and every element of Claims 1, 34 and 65. In this regard, Odom does not teach, suggest or disclose a user-redefinable configuration that includes whether DMA data transfer **is used or not used** to transfer data over the bus, or a user input that includes a configuration for the transfer of data over the bus selected from one of a DMA data transfer or a non-DMA data transfer. Rather, Odom involves solely the use of DMA data transfer, and does not teach, suggest or disclose whatsoever that DMA data transfer can be a user-redefinable configuration. Further, Odom does not disclose whatsoever **channels that are user-redefinable based on a user input**. Odom merely discloses that the channel configurations are pulled from a context memory – and not generated based on a user input.

Accordingly, for at least these reasons, Applicants respectfully assert that Odom does not teach each and every element of Applicants' claims, and as such, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of Claims 1, 34 and 65 under 35 U.S.C. § 102(e).

With regard to Claims 2-6, 8-14, 16-19, 36, 37, 47 and 50-52, Applicants note these claims depend directly or indirectly from either independent Claims 1 or 34, and thus, should be in condition for allowance for the reasons set forth for Claims 1 and 34 above. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the rejections of Claims 2-6, 8-14, 16-19, 33, 36, 37, 47 and 50-52 under 35 U.S.C. § 102(e).

Regarding Claim 20, this claim has been amended to include the allowable subject matter of Claim 24. Again, Odom fails to teach, suggest or disclose the claimed channel configuration types called for in amended Claim 20. Accordingly, Applicants respectfully assert that independent Claim 20 is in condition for allowance for at least these reasons, and as such, request the Examiner to reconsider and withdraw the rejection of Claim 20 under 35 U.S.C. § 102(e). Further, as Claims 22, 23, 26-29 and 33 depend from independent Claim 20, these claims should be in condition for allowance for at least the reasons set forth regarding Claim 20. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejections of Claims 22, 23, 26-29 and 33 under 35 U.S.C. § 102(e).

Claims 54-58, 62-63 and 66 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Andrade et al. (U.S. Pat. App. No. 2002/0055834; hereinafter "Andrade"). This rejection is respectfully traversed.

Andrade appears to disclose a reconfigurable test system that includes a host computer coupled to a reconfigurable test instrument over a bus. A software configuration utility on the host computer enables a user to define the number of

channels, the directionality of the channel, the telecommunication protocol (RS323, SLIP, etc.) for the serial channels, the line encoding scheme and voltage levels for the channels, synchronous or asynchronous data transfer, and a choice of test scenario. In contrast, independent Claim 63 has been amended to recite:

> a user interface through which a user specifies a stored configuration file, the configuration file comprising configuration information for a plurality of channels over a bus that interconnects a plurality of data processing boards the configuration file including **whether to use DMA for the data transfers over the bus** . . .(emphasis added).

Independent Claim 66 has been amended to recite:

> a plurality of instructions that are executable by the computer for receiving configuration data from the user interface and generating a configuration file therefrom, the configuration file comprising configuration information for a plurality of channels over a bus that interconnects a plurality of data processing boards, the configuration data incuding **whether or not DMA is used to transfer data over the bus** . . . (emphasis added).

In view of the above discussion, Applicants respectfully assert that Andrade does not teach, suggest or disclose each and every element of Claims 63 and 66. In this regard, Andrade does not teach, suggest or disclose a user-redefinable configuration that includes **whether DMA data transfer is used or not used** to transfer data over the bus. Rather, Andrade only appears to involve a telecommunications protocol that can be user defined. Andrade does not teach, suggest or disclose whatsoever that the user can select **whether to use DMA to transfer data over the bus**. Further, Applicants note that as the purpose of Andrade is to provide test data and to interpret test data received from the reconfigurable test instrument, it would be unlikely that DMA would be used to transfer the data from the reconfigurable test instrument to the computer. In

addition, Andrade does not teach, suggest or disclose whatsoever that DMA data transfer can be a user-redefinable configuration.

Accordingly, for at least these reasons, Applicants respectfully assert that Andrade does not teach each and every element of Applicants' claims, and as such, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of Claims 63 and 66 under 35 U.S.C. § 102(b).

Regarding Claim 54, Applicants note that Claim 54 has been amended to include the allowable subject matter of Claim 24, and further, Andrade fails to teach, suggest or disclose the claimed channel configuration types. Accordingly, it is respectfully asserted that independent Claim 54 is in condition for allowance for at least these reasons, and Applicants respectfully request the Examiner to reconsider and withdraw the rejection of Claim 54 under 35 U.S.C. § 102(b). Further, as Claims 56-58 and 62 depend from independent Claim 54, these claims should be in condition for allowance for at least the reasons set forth for Claim 54. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the rejections of Claims 56-58 and 62 under 35 U.S.C. § 102(b).

REJECTION UNDER 35 U.S.C. § 103

Claims 7-11, 13, 15-18, 30-32 and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Odom. This rejection is respectfully traversed.

Applicants respectfully refer the Examiner to the remarks regarding Claims 1-6, 20-23, 26-29, 33-37, 47, 50-52 and 65 for a discussion of the Odom reference. Independent Claim 7 has been amended to recite:

each board comprising a communication utility for communicating data over the bus to the other board, and the communication utility communicates data according to a redefinable configuration such that a bus utilization percentage in a range from 13% to 25% is achieved for 8 Kbyte data transfers across the bus, and the communication utility is configured to communicate data through a plurality of channels, wherein at least one channel has a user-redefinable configuration with respect to **whether DMA is used or not used to transfer data over the bus** (emphasis added).

In view of the above discussion, Applicants respectfully assert that Odom does not teach, suggest or disclose each and every element of Claim 7. In this regard, Odom does not teach, suggest or disclose a user-redefinable configuration that includes whether DMA data transfer is used or not used to transfer data over the bus. Rather, Odom involves solely the use of DMA data transfer, and does not teach, suggest or disclose whatsoever that DMA data transfer can be a user-redefinable configuration. As noted, Odom merely discloses that the channel configurations are pulled from a context memory – and not generated based on a user input.

Accordingly, for at least these reasons, Applicants respectfully assert that Odom does not teach, suggest or disclose each and every element of the amended Claim 7. Reconsideration and withdrawal of the rejection of Claim 7 under 35 U.S.C. § 103(a) is therefore requested. With regard to Claims 8-11, 13 and 15-18, as Claims 8-11, 13 and 15-18 depend from independent Claim 7, Applicants believe these claims to be in condition for allowance for at least the reasons set forth for Claim 7. Accordingly, it is respectfully requested that the Examiner reconsider and withdraw the rejections of Claims 8-11, 13 and 15-18 under 35 U.S.C. § 103(a).

Claims 14, 25, 48 and 49 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Odom as applied to Claims 9, 22, and 36 above, and further in view of Blixt et al. (U.S. Pat. No. 6,938,118; hereinafter "Blixt"). Claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Odom as applied to Claim 7 above, and further in view of Applicants' Specification. Claim 53 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Odom as applied to Claim 36 above, and further in view of Smith et al. (U.S. Pat. No. 6,222,537; hereinafter "Smith"). Claims 59 and 61 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Andrade as applied to Claim 55 above, and further in view of Odom. Claim 60 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Andrade as applied to Claim 55 above, and further in view of Blixt. Claim 64 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Andrade as applied to Claim 63 above, and further in view of Microsoft Press Computer Dictionary, Second Edition ("Microsoft"). These rejections are respectfully traversed.

With regard to Claims 14, 19, 25, 48, 49, 53, 59, 60, 61 and 64, these claims depend directly or indirectly from either independent Claims 7, 20, 34, 54 or 63, and thus should be in condition for allowance for the reasons set forth for Claims 7, 20, 34, 54 and 63 above. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the rejections of Claims 14, 19, 25, 48, 49, 53, 59, 60, 61 and 64 under 35 U.S.C. § 103(a).

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: 10/25/06

By: _____
Mark D. Elchuk, Reg. No. 33,686
Erica K. Schaefer, Reg. No. 55,861

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

MDE/EKS/chs

G:\eschaefe\7784\000900-999\000936\936Amendment Due 10-25-06.doc